

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA
SAN JOSE DIVISION

GODO KAISHA IP BRIDGE 1,

Plaintiff,

v.

OMNIVISION TECHNOLOGIES, INC,

Defendant.

Case No. 17-cv-00778-BLF

**ORDER CONSTRUING CLAIMS IN
U.S. PATENT NO. 7,164,113**

[Re: ECF 103]

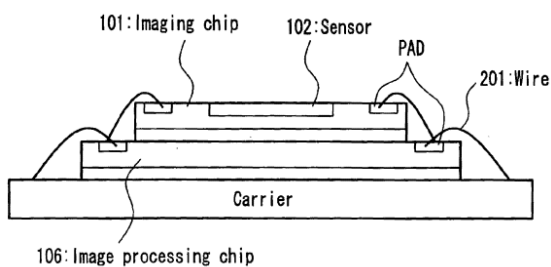
Plaintiff Godo Kaisha IP Bridge 1 (“IPB”) brings this patent infringement lawsuit against Defendant OmniVision Technologies, Inc. (“OmniVision”) alleging infringement of U.S. Patent No. 7,164,113B2 (“the ’113 patent”). The Court held a tutorial and a *Markman* hearing on February 9, 2018, for the purpose of construing three disputed terms in the ’113 Patent. On February 16, 2018, IPB filed an amended motion for leave to file a supplemental brief, which was opposed by OmniVision. ECF 121, 122. The Court granted in part and denied in part IPB’s amended motion and allowed IPB to file its proposed supplemental brief as to only the first disputed claim term. ECF 123. The Court permitted OmniVision to file a supplemental responsive brief. *Id.* On March 5, 2018, OmniVision submitted its supplemental responsive brief.

I. BACKGROUND ON THE ’113 PATENT

The ’113 patent is titled “Solid State Imaging Device with Semiconductor Imaging and Processing Chips.” It was filed on September 30, 2003 and issued on January 16, 2007. The ’113 patent generally relates to “a small, high performance imaging device,” which, for example, can be used in cell phones. ’113 patent at Abstract; *id.* at 1:8–9. The imaging device includes an imaging chip (or “imaging semiconductor chip”) and an image processing chip (or “image processing semiconductor chip”). *Id.* at Abstract; *id.* at 4:34–37.

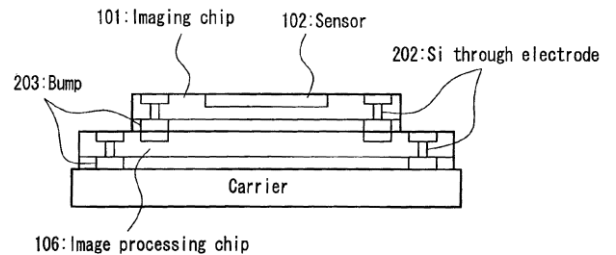
The specification discloses the following embodiment of the imaging device. The imaging semiconductor chip includes “a sensor for converting light into an electric signal.” *Id.* at 4:38–40. Vertical and horizontal scanning circuits drive the sensor, and an amplifier amplifies the signal of the sensor. *Id.* at 4:40–42. An image signal output terminal outputs an image signal, which is received by the image processing semiconductor chip. *Id.* at 4:47–48, 5:8–9. The image processing semiconductor chip includes a timing generator, a gain control amplifier, an analog/digital converter, and an image processing circuit. *Id.* at 4:58–61. The gain control amplifier controls the magnitude of the signal received from the imaging semiconductor chip, and the analog/digital converter converts the signal into a digital signal. *Id.* at 4:62–65. Using the digital signal, the imaging processing circuit generates a luminance signal and a color signal. *Id.* at 4:65–5:1. The signals can be used to generate a picture. *See, e.g., id.* at 6:50–52. In this way, the imaging device can be used in cell phones and digital still cameras to take images and display pictures.

The '113 patent discloses two examples for stacking the imaging semiconductor chip and the image processing semiconductor chip. Figures 3A and 3B illustrate the examples:



Wire bonding method

FIG. 3A



Si through electrode method

FIG. 3B

'113 patent, Figs. 3A and 3B. In Figure 3A, the imaging semiconductor chip and image processing semiconductor chip are connected by wire bonding. *Id.* at 5:39–40. In Figure 3B, a “Si through electrode is provided in the imaging [semiconductor] chip so that the [through] electrode is drawn to the bottom” of the imaging semiconductor chip. *Id.* at 5:48–50. A bump of the imaging semiconductor chip is used to make connection with the image processing semiconductor chip. *Id.* at 5:50–51.

Generally, as described in the background section of the '113 patent, circuits such as scanning circuits and timing generators can be CMOS circuits. *See, e.g., id.* at 2:7–9, 2:22–24. CMOS circuits can generate noise by creating a current fluctuation that is called “through current.” *See id.* at 2:3–4. The imaging device of the '113 patent is purportedly an improvement over prior art systems because it “eliminat[es] a through current peculiar to a CMOS circuit.” *Id.* at 2:48–51, 6:58–61. This can be achieved by having “all transistors of the imaging semiconductor chip . . . formed of the same electric conductor” such as either “n-channel MOS transistors or p-channel MOS transistors.” *See, e.g., id.* at 2:43–51, 3:44–46, 6:5–6. In this approach, the number of steps in the fabrication process is reduced and thereby the imaging device can be produced at low cost. *Id.* at 2:48–58, 6:5–7. The specification also discloses that stacking the imaging semiconductor chip and the image processing semiconductor chip can shorten the length of the wire connecting the two chips, and thereby reduce noise and improve performance. *Id.* at 6:11–15.

IPB and OmniVision dispute three claim terms that are recited in claims 1, 2, 3, 6, and 8 of the '113 patent. Claim 1 is an independent claim. Claims 2, 3, 6, and 8 are dependent on claim 1. Independent claim 1 recites:

1. A solid state imaging device comprising:

an imaging semiconductor chip for outputting an analog image signal in which all transistors are formed of the same conductivity type; and

an image processing semiconductor chip, to which the analog image signal is input, comprising CMOS transistors,

wherein the imaging semiconductor chip comprises:

a photoelectric converter for converting light into an electric signal; and

an amplifier for amplifying the electric signal generated by the photoelectric converter, and

wherein the image processing semiconductor chip comprises:

an AD converter for converting the analog image signal output from the imaging semiconductor ship into a digital signal; and

an image processing circuit for performing image processing based on the digital signal converted by the AD converter.

Id. at 8:29–49.

II. LEGAL STANDARD

A. Claim Construction

Claim construction is a matter of law. *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 387 (1996). “It is a ‘bedrock principle’ of patent law that ‘the claims of a patent define the invention to which the patentee is entitled the right to exclude,’” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (internal citation omitted), and, as such, “[t]he appropriate starting point . . . is always with the language of the asserted claim itself,” *Comark Commc’ns, Inc. v. Harris Corp.*, 156 F.3d 1182, 1186 (Fed. Cir. 1998).

Claim terms “are generally given their ordinary and customary meaning,” defined as “the meaning . . . the term would have to a person of ordinary skill in the art in question . . . as of the effective filing date of the patent application.” *Phillips*, 415 F.3d at 1313 (internal citation omitted). The court reads claims in light of the specification, which is “the single best guide to the meaning of a disputed term.” *Id.* at 1315; *see also Lighting Ballast Control LLC v. Philips Elecs. N. Am. Corp.*, 744 F.3d 1272, 1284-85 (Fed. Cir. 2014) (en banc). Furthermore, “the interpretation to be given a term can only be determined and confirmed with a full understanding of what the inventors actually invented and intended to envelop with the claim.” *Phillips*, 415 F.3d at 1316 (quoting *Renishaw PLC v. Marposs Societa’ per Azioni*, 158 F.3d 1243, 1250 (Fed. Cir. 1998)). The words of the claims must therefore be understood as the inventor used them, as such understanding is revealed by the patent and prosecution history. *Id.* The claim language, written description, and patent prosecution history thus form the intrinsic record that is most significant when determining the proper meaning of a disputed claim limitation. *Id.* at 1315-17; *see also Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996).

Evidence external to the patent is less significant than the intrinsic record, but the court may also consider such extrinsic evidence as expert and inventor testimony, dictionaries, and learned treatises “if the court deems it helpful in determining ‘the true meaning of language used in the patent claims.’” *Phillips*, 415 F.3d at 1318 (quoting *Markman*, 52 F.3d at 980). However,

extrinsic evidence may not be used to contradict or change the meaning of claims “in derogation of the ‘indisputable public records consisting of the claims, the specification and the prosecution history,’ thereby undermining the public notice function of patents.” *Id.* at 1319 (quoting *Southwall Techs., Inc. v. Cardinal IG Co.*, 54 F.3d 1570, 1578 (Fed. Cir. 1995)).

B. Indefiniteness

Under 35 U.S.C. § 112, ¶ 2 (2006 ed.),¹ a patent must “conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as [the] invention.” Section 112, ¶ 2 includes what is commonly called the “definiteness” requirement. *Nautilus, Inc. v. Biosig Instruments, Inc.*, 134 S. Ct. 2120, 2125 (2014). In *Nautilus*, the Supreme Court held that “a patent is invalid for indefiniteness if its claims, read in light of the specification delineating the patent, and the prosecution history, fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention.” *Nautilus*, 134 S. Ct. at 2124. Indefiniteness renders a claim invalid, and must be shown by clear and convincing evidence. *See Halliburton Energy Servs. v. M-I LLC*, 514 F.3d 1244, 1249 (Fed. Cir. 2008); *cf. Nautilus*, 134 S. Ct. at 2130 n.10.

III. CONSTRUCTION OF DISPUTED TERMS

A. “imaging semiconductor chip”/“imaging semiconductor ship” (claims 1, 2, 3, 6, and 8)

IPB’s Proposal	OmniVision’s Proposal	Court’s Construction
“a non-CCD semiconductor chip for image capture”	Plain and ordinary meaning	“a non-CCD semiconductor chip for image capture”

The parties’ dispute here revolves around a single issue: whether the “imaging semiconductor chip” and “imaging semiconductor ship”² include a non-CCD semiconductor chip. IPB argues that the ’113 patent disavows CCD technology. Opening Br. 5–6, ECF 103. Hence, in

¹ Paragraph 2 of 35 U.S.C. § 112 was replaced with newly designated § 112(b) when § 4(c) of the America Invents Act (“AIA”), Pub. L. No. 112-29, took effect on September 16, 2012. Because the ’113 patent was filed before that date, the Court refers to the pre-AIA version of § 112.

² The term “imaging semiconductor ship” is recited in independent claim 1. At the hearing, the parties agreed that the word “ship” is a typographical error and refers to “chip.” Hearing Tr. 6:2–8, ECF 120. Thus, the Court construes “imaging semiconductor ship” to have the same meaning as “imaging semiconductor chip” and refers to only the latter in this order.

1 IPB's view, the claimed "imaging semiconductor chip" does not include those that use CCD
2 sensors for capturing images. OmniVision counters that the intrinsic record of the '113 patent
3 does not contain a clear disavowal of CCD imaging semiconductor chips. Responsive Br. 3–5,
4 ECF 110.

5 "Claim terms are generally given their ordinary and customary meaning as understood by a
6 person of ordinary skill in the art when read in the context of the specification and prosecution
7 history." *Unwired Planet, LLC v. Apple Inc.*, 829 F.3d 1353, 1358 (Fed. Cir. 2016) (citation
8 omitted). This general rule has two exceptions: "1) when a patentee sets out a definition and acts
9 as his own lexicographer, or 2) when the patentee disavows the full scope of a claim term either in
10 the specification or during prosecution." *Id.*

11 Here, the parties agree that "imaging semiconductor chip" is used to capture an image.
12 Opening Br. 5; Responsive Br. 3. This is achieved by the imaging semiconductor chip's sensor
13 which converts the collected light into an electric signal. As indicated in the parties' papers, under
14 its ordinary meaning, an "imaging semiconductor chip" can generally include a sensor based on
15 CCD or CMOS sensors.³ See Opening Br. 6 (citing Ex. C, Fossum, Digital Camera System on a
16 Chip, ECF 103-4); Responsive Br. 3. The dispute is whether the general rule that a claim term has
17 its ordinary meaning is inapplicable because the patentee redefined "imaging semiconductor chip"
18 or disavowed the full scope of that term. *Unwired Planet*, 829 F.3d at 1358. IPB does not argue
19 that the patentee of the '113 patent acted as "his own lexicographer" and redefined "imaging
20 semiconductor chip." Rather, IPB contends that the specification of the '113 patent "clearly
21 disavows" imaging semiconductor chips that use CCD sensors.⁴ Opening Br. 5–6.

22 "Where the specification makes clear that the invention does not include a particular
23 feature, that feature is deemed to be outside the reach of the claims of the patent, even though the
24 language of the claims, read without reference to the specification, might be considered broad
25

26 ³ The parties do not distinguish between MOS and CMOS technology in discussing imaging
27 sensors. Hence, to avoid confusion, the Court will use the term CMOS unless quoting the
specification.

28 ⁴ IPB represents that the patentee did not disavow CCD imaging semiconductor chips during
prosecution of the '113 patent. See Hearing Tr. 7:25–8:3.

enough to encompass the feature in question.” *Thorner v. Sony Computer Entm’t Am. LLC*, 669 F.3d 1362, 1366 (Fed. Cir. 2012) (citing *SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc.*, 242 F.3d 1337, 1341 (Fed. Cir. 2001)). The patentee need not expressly or explicitly disavow the full scope of the claim in the specification or prosecution history. *Trustees of Columbia Univ. in City of New York v. Symantec Corp.*, 811 F.3d 1359, 1364 (Fed. Cir. 2016). In fact, the patentee may disclaim the scope of a claim term by *implication* “such that the meaning may be found in or ascertained by a reading of the patent documents.” *Id.* (citing *Phillips*, 415 F.3d at 1320–21). As such, disavowal may be implicit in the intrinsic record. *Rembrandt Patent Innovations, LLC v. Apple, Inc.*, No. 2016-2324, 2017 WL 5632684, at *5 (Fed. Cir. Nov. 22, 2017) (citation omitted). But still, the disavowal must be clear and unmistakable to constitute a disclaimer. *Thorner*, 669 F.3d at 1366–67.

IPB argues that the specification clearly disavows CCD imaging semiconductor chips. Opening Br. 5–6. The Court agrees. First of all, upon describing the “present invention,” the specification begins by disparaging the use of CCD sensors.

As described in the following, the imaging device of the **present invention** also can contribute to higher performance of a digital camera.

A conventional digital still camera, which uses a **CCD-type imaging chip** as an imaging chip, has the **following problems**. A sensor of the CCD-type imaging chip includes a photoelectric conversion element for converting light into an electric charge and a CCD element for carrying the electrical charge. The CCD element cannot be much smaller than the photoelectric conversion element because it carries the electric charge generated by the photoelectric conversion element. In other words, it is not possible to increase a proportion of the area occupied by the photoelectric conversion element in the conventional digital still camera.

’113 patent at 7:41–54. The specification further describes the use of the so-called “MOS sensor” in the “present invention” and the accompanied advantages:

[I]t is possible for the imaging chip to have higher sensitivity than the CCD-type imaging chip. **A so-called MOS sensor used in the present invention** has been regarded as inferior to the CCD-type imaging chip in performance due to factors such as variations in transistors of each pixel. However, the technique that can overcome those factors has been developed in recent years. . . . The application of the **imaging device of the present invention** to a security camera

also can provide a tremendous effect because the imaging device easily improves the sensitivity.

As described above, **the present invention** is useful for a solid state imaging device that can reduce the chip area as a whole and the cost and equipment using the solid state imaging device.

Id. at 7:59–8:19 (emphasis added). In this portion of the specification, the ’113 patent describes the feature of the “present invention” on the use of CMOS sensors as opposed to CCD sensors in the “imaging semiconductor chip.” This description clearly limits the scope of the invention to the use of CMOS sensors in the “imaging semiconductor chip.” *GPNE Corp. v. Apple Inc.*, 830 F.3d 1365, 1371 (Fed. Cir. 2016) (“When a patent . . . describes the features of the ‘present invention’ as a whole, this description limits the scope of the invention.” (quoting *Verizon Servs. Corp. v. Vonage Holdings Corp.*, 503 F.3d 1295, 1308 (Fed. Cir. 2007))).

OmniVision asserts that the ’113 patent “never expressly disavows CCD imaging semiconductor chips as imaging semiconductor chips.” Responsive Br. 5. However, the specification need not explicitly state that “imaging semiconductor chips” are not CCD imaging semiconductors chips to disclaim CCD sensors. *Trustees of Columbia Univ.*, 811 F.3d at 1363 (“Our case law does not require explicit redefinition or disavowal.”). Moreover, the ’113 patent does not merely criticize CCD technology. The ’113 patent goes beyond direct criticism and clearly disavows CCD imaging semiconductor chips as the specification states that the “present invention” uses the so-called “MOS sensor” and achieves a high sensitivity. ’113 patent at 7:62–65.

OmniVision also contends that the patentee’s use of words in the ’113 patent shows that the patentee chose not to exclude CCD imaging semiconductor chips. Responsive Br. 5. In particular, OmniVision points out that the patentee limited the imaging semiconductor chip to include “n-channel MOS transistors” in claim 3 and to “p-channel MOS transistors” in claim 4. *Id.* According to OmniVision, claims 3 and 4 show that the patentee did not intend to limit the scope of the imaging semiconductor chip in independent claim 1. *Id.* The Court is unpersuaded by this argument. The specification discloses that the imaging semiconductor chip can include various circuits such as scanning circuits. ’113 patent at 4:50–53. The specification further

discloses that transistors used in those circuits can be formed by either n- or p-channel MOS transistors. *Id.* at 4:50–53, 6:5–6. In light of this disclosure, the fact that claims 3 and 4 recite that “transistors of the imaging semiconductor chip are formed as” “n-channel MOS transistors” and “p-channel MOS transistors,” respectively, does not pertain to the issue of whether the imaging semiconductor chip excludes CCD sensors or not.

During the hearing, OmniVision argued that column 8 lines 22 to 27 of the ’113 patent demonstrates that the patentee did not intend to limit the scope of the claims to exclude CCD imaging semiconductor chips. Hearing Tr. 15:4–8. That portion of the specification reads:

The embodiments disclosed in this application are to be considered in all respects as illustrative and not limiting. The scope of the invention is indicated by the appended claims rather than by the foregoing description, and all changes which come within the meaning and range of equivalency of the claims are intended to be embraced therein.

’113 patent at 8:22–27. After reviewing the parties’ supplemental briefing on this issue, the Court is unpersuaded that this paragraph negates the ’113 patent’s clear disavowal of the CCD imaging semiconductor chip as disclosed in column 7 line 39 to column 8 line 19 of the specification. The Court addresses the parties’ arguments below.

According to IPB, courts have found a clear disavowal despite the fact that the patent-in-suit included similar “boilerplate language” indicating that the invention is defined in accordance with the appended claims. Suppl. Opening Br. 2–4, ECF 121-1 (citing *Rembrandt*, 2017 WL 5632684; *Wireless Agents LLC v. Sony Ericsson Mobile Commc'ns AB*, 189 F. App’x 965, 967 (Fed. Cir. 2006); *Wavestream Corp. v. CAP Wireless, Inc.*, No. CV 05-4254, 2006 WL 5104656, at *7 (C.D. Cal. Nov. 13, 2006); *Les Traitments Des Eaux Poseidon, Inc. v. KWI, Inc.*, 135 F. Supp. 2d 126, 136 (D. Mass. 2001)). As such, IPB urges the Court to reach the same conclusion.

While the exemplary “boilerplate language” cited by IPB in its supplemental brief is not identical to column 8 lines 22 to 27 of the ’113 patent, the Court finds IPB’s argument to be persuasive. Column 8 lines 22 to 23 states that “[t]he embodiments disclosed in this application are to be considered in all respects as illustrative and not limiting.” This statement merely restates the unremarkable proposition that the disclosed embodiments do not limit the claims. *Homeland*

1 *Housewares, LLC v. Whirlpool Corp.*, 865 F.3d 1372, 1376 (Fed. Cir. 2017) (“[P]articular
2 embodiments appearing in the written description will not be used to limit claim language that has
3 broader effect.”). The paragraph at issue further states that “[t]he scope of the invention is
4 indicated by the appended claims rather than by the foregoing description.” ’113 patent at 8:23–
5 25. When read in context, this portion of the specification informs the reader that the claimed
6 invention is not limited by the illustrative aspects of the aforementioned embodiments described in
7 the specification. On the other hand, as discussed above, the specification disavows CCD imaging
8 semiconductor chips and describes that the “present invention” uses a “MOS sensor” in the
9 imaging semiconductor chip. This narrowed meaning is incorporated into the term “imaging
10 semiconductor chip” recited in independent claim 1. *Wavestream*, 2006 WL 5104656, at *7
11 (“[I]nventors who say what the invention is will be held to their word.”). Hence, unlike
12 OmniVision’s contention, the fact that the specification states that the “scope of the invention is
13 indicated by the appended claims” does not overcome the patentee’s clear disavowal of CCD
14 imaging semiconductor chips.

15 The above conclusion is not changed by OmniVision’s attempt to distinguish the cases
16 cited in IPB’s supplemental brief. For example, OmniVision distinguishes *Rembrandt* by
17 asserting that the patent-in-suit “repeatedly characterized the ‘*present invention*’ as being
18 ‘automated.’” Suppl. Responsive Br. 5, ECF 124 (emphasis in original) (citing *Rembrandt*, 2017
19 WL 5632684, at *4–5). However, while repeated characterization of the invention supports a
20 strong showing of disavowal, such a characterization is not necessary. A single sentence that
21 describes the “present invention” may be sufficient to limit the scope of the invention. *See GPNE*,
22 830 F.3d at 1371 (holding that a single sentence that described the invention as a whole
23 demonstrated that the patentee limited the claims). Here, the specification describes that the
24 “present invention” uses the so-called “MOS sensor” and achieves high sensitivity. ’113 patent at
25 7:61–65. As discussed above, that disclosure and the accompanied description in the specification
26 constitutes a clear disavowal.

27 As another example, OmniVision distinguishes *Les Traitments Des Eaux Poseidon* on the
28 grounds that the court in that case found disclaimer because the patentee expressly disclaimed an

embodiment during prosecution. Suppl. Responsive Br. 5 (citing *Les Traitements Des Eaux Poseidon*, 135 F. Supp. 2d at 136). OmniVision contends that the patentee of the '113 patent “never stated during prosecution that the invention excludes CCD imaging semiconductor chips.” *Id.* While that may be true, it is not necessary for the prosecution history to show that the patentee disclaimed a feature because disavowal can be shown in the specification. *See Trustees of Columbia Univ.*, 811 F.3d at 1365–66 (holding that the specification’s disclosure limited the ordinary meaning of a claim term). Here, as discussed above, the specification clearly describes that the “present invention” uses CMOS sensors in the “imaging semiconductor chip.” Hence, the specification excludes CCD imaging semiconductor chips.

Accordingly, the Court adopts IPB’s proposal and construes “imaging semiconductor chip” to mean “a non-CCD semiconductor chip for image capture.”

B. “an analog/digital converter” (claim 8)

IPB’s Proposal	OmniVision’s Proposal	Court’s Construction
“a device for converting an analog image signal originating from the imaging semiconductor chip into a digital output signal”	Indefinite	“an analog/digital converter in addition to the AD converter recited in claim 1”

Independent claim 1 recites that the image processing semiconductor chip comprises an “AD converter for converting the analog image signal output from the imaging semiconductor ship into a digital signal.” Claim 8, which is dependent on claim 1, further recites that the image processing semiconductor chip comprises an “analog/digital converter.” The parties agree that “AD converter” is a device that converts an analog signal to a digital signal. Opening Br. 9; Responsive Br. 6. The parties also agree that the '113 patent uses the word “AD converter” and “analog/digital converter” to refer to the same kind of device. *See* Opening Br. 9; Hearing Tr. 36:24–37:18.

The parties’ dispute here revolves around a single issue: whether the “analog/digital converter” in claim 8 is indefinite because claim 1 recites the “AD converter.” OmniVision argues that claim 8 is indefinite because it does not use the words “said” or “the” before the term “analog/digital converter” to indicate whether or not that term corresponds to the term “AD

converter” in claim 1. Responsive Br. 7.

On the other hand, IPB contends that claim 8 is not indefinite for several reasons. IPB asserts that “analog/digital converter” simply means “a device for converting an analog image signal originating from the imaging semiconductor chip into a digital output signal.” Opening Br. 7. In doing so, IPB suggests that claim 8 recites an “analog/digital converter” in addition to the “AD converter” in claim 1 because those claims “allow for one or *more* A/D converters.” Reply Br. 7, ECF 114 (emphasis in original). Alternatively, IPB argues that the “analog/digital converter” in claim 8 means the “AD converter” in claim 1. *Id.* at 7–8. According to IPB, during patent prosecution of the ’113 patent, the patentee added the “analog/digital converter” in claim 9 (which issued as claim 8) into claim 1 as the “AD converter” but inadvertently did not delete “analog/digital converter” in claim 9. *Id.* IPB believes that this alternative construction is the most reasonable construction. Reply Br. 5, 7. OmniVision counters that the very fact that IPB offers multiple constructions show that the term “analog/digital converter” in claim 8 is indefinite.

The presence of the limitation “analog/digital converter” in dependent claim 8 raises a presumption that the limitation is not present in independent claim 1. *Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 910 (Fed. Cir. 2004) (“[T]he presence of a dependent claim that adds a particular limitation raises a presumption that the limitation in question is not found in the independent claim.”). That presumption “can be overcome if the circumstances suggest a different explanation, or if the evidence favoring a different claim construction is strong.” *Id.*

Here, IPB argues that it has overcome the presumption because the prosecution history shows that the patentee added “analog/digital converter” in claim 9 (which issued as claim 8) into claim 1 as the “AD converter” but failed to delete the “analog/digital converter” limitation in claim 9 by mistake. Reply Br. 5–7. However, the prosecution history does not support IPB’s argument. During prosecution, the patent examiner rejected claim 9 which recited an “analog/digital converter.” Ex. B to Rafilson Decl. at 778-IPB-OVT_0000132–39 (“May 5, 2006 Office Action”), ECF 103-3. As such, the patentee was not informed that adding the “analog/digital converter” in claim 9 into independent claim 1 would have placed the claims in a condition for allowance. Hence, the fact that the applicant amended claim 1 to recite an “AD

1 converter” without amending claim 9 indicates that the patentee added a new limitation. IPB
2 provides no evidence other than attorney argument that the applicant inadvertently failed to delete
3 “analog/digital converter” in claim 9, which issued as claim 8. Without evidence, the Court will
4 not speculate what the patentee intended to do.

5 As discussed above, IPB has failed to overcome the presumption that the limitation in
6 claim 8 is not present in claim 1. In addition, claims 1 and 8 recite that the image processing
7 semiconductor chip “comprises” the listed elements. It is well established that in the patent claim
8 context “comprises” is open-ended and allows for additional elements. *CIAS, Inc. v. All. Gaming*
9 *Corp.*, 504 F.3d 1356, 1360 (Fed. Cir. 2007). Thus, the plain reading of the language shows that
10 claim 8 recites an “analog/digital converter” in addition to the “AD converter” element in claim 1.

11 IPB urges the Court to construe those two elements in claims 1 and 8 to be the same. But
12 it is not the Court’s role to rewrite patent claims. *See Nike Inc. v. Wolverine World Wide, Inc.*, 43
13 F.3d 644, 647 (Fed. Cir. 1994) (rejecting the proposed claim construction that would “rewrite [the
14 patentee’s] patent claims to suit its needs in this litigation”). To the extent that IPB argues that the
15 prosecution history supports a showing of a mistake in amending the claims, that showing would
16 suggest that claim 8 is indefinite. However, the Court does not find that the prosecution history
17 suggests a mistake as IPB contends. Taking into account the presumption of validity and the fact
18 that the Court’s construction is not contradicted by the intrinsic record, the Court is unpersuaded
19 by IPB’s argument.

20 On the other hand, the Court rejects OmniVision’s argument that claim 8 is indefinite. As
21 discussed above, the Court finds that the plain reading of the claims show that claim 8 recites an
22 “analog/digital converter” in addition to the “AD converter” in claim 1. Claim 8, read in light of
23 the specification and the prosecution history, does not “fail to inform, with reasonable certainty,
24 those skilled in the art about the scope of the invention.” *Nautilus*, 134 S. Ct. at 2124.

25 For the foregoing reasons, the Court adopts the following construction: “an analog/digital
26 converter in addition to the AD converter recited in claim 1.”
27
28

C. “through electrode” (claim 6)

IPB’s Proposal	OmniVision’s Proposal	Court’s Construction
<p>“electrode that passes vertically through a layer of material in the imaging semiconductor chip to make an electrical connection”</p> <p>Alternative:⁵ “electrode that passes vertically through a layer of material in the imaging semiconductor chip to make an electrical connection <i>where said electrode does not provide an electrical connection to the image processing semiconductor chip via an external bonding wire</i>”</p>	<p>“a conductor in the imaging semiconductor chip for providing electrical contact at an opening located at the bottom of the imaging semiconductor chip”</p>	<p>“electrode that passes vertically through at least a layer of material in the imaging semiconductor chip for providing electrical contact at an opening located at the bottom of the imaging semiconductor chip, where the bottom is a portion of the imaging semiconductor chip facing the image processing semiconductor chip”</p>

The disputed term “through electrode” appears in dependent claim 6, which recites:

6. The solid state imaging device according to claim 1, wherein a **through electrode** is provided in the imaging semiconductor chip, and the imaging semiconductor chip and the image processing semiconductor chip are connected electrically via wiring connected to the through electrode.

’113 patent at 8:63–67. During the hearing, the parties agreed that Figure 3B of the ’113 patent discloses the “through electrode.” Hearing Tr. 55:7–9, 60:9–10. The parties also agreed that the embodiment in Figure 3A is not covered by claim 6. *See id.* at 57:18–19, 62:7–11.

IPB argues that the Court should adopt its proposed construction instead of OmniVision’s proposal. Opening Br. 10–11. In particular, IPB contends that OmniVision’s proposed construction is ambiguous due to the word “bottom” in OmniVision’s proposal. Opening Br. 10. According to IPB, some devices have the imaging semiconductor chip “flipped” and, in that case, the “bottom” would not correspond to “the side of the imaging semiconductor chip that faces the image processing semiconductor chip.” *Id.*

On the other hand, OmniVision asserts that IPB’s construction using “through a layer of

⁵ IPB proposed the alternative construction in its reply brief. Reply Br. 8.

material” fails to capture the meaning of “through electrode” because there can be more than one layer and the construction does not recite that the electrode provides contact at an opening located at the bottom of the imaging semiconductor chip. *See* Hearing Tr. 56:6–57:12. OmniVision also argues that IPB’s construction impermissibly covers the embodiment using the wire bonding method as depicted in Figure 3A of the ’113 patent. Responsive Br. 10. In response, IPB proposed an alternative construction which adds a further limitation that the “electrode does not provide an electrical connection to the image processing semiconductor chip via an external bonding wire.” Reply Br. 8.

The parties have identified valid issues in the opposing party’s construction. For instance, as OmniVision asserts, IPB’s original proposal does not capture the meaning of “through electrode” and that proposal would read on the embodiment in Figure 3A, which uses the wire bonding method. Although IPB’s alternative proposal excludes use of the wire bonding method using a negative limitation, the new construction still does not require that the “through electrode” is drawn to the bottom of the imaging semiconductor chip as described in the specification (’113 patent at 5:48–51). On the other hand, OmniVision’s construction does not require that the electrode passes through at least one layer in the imaging semiconductor chip in a way that the electrode is drawn to the bottom as described in the specification (’113 patent at 5:48–50). Also, there is some lack of clarity regarding which portion of the imaging semiconductor chip corresponds to the “bottom.”

The Court finds that combining the parties’ proposals can address the issues identified by the parties. Specifically, the combination of the concept that the (1) electrode passes through at least a layer of material in order to (2) provide an electrical contact at an opening located at the bottom of the imaging semiconductor chip captures the meaning of “through electrode” as the specification describes in relation to Figure 3B. In addition, clarifying that the “bottom is a portion of the imaging semiconductor chip facing the image processing semiconductor chip” addresses any concerns raised by IPB as to the meaning of “bottom.”

Accordingly, the Court adopts the following construction for the term “through electrode”:

“electrode that passes vertically through at least a layer of material

in the imaging semiconductor chip for providing electrical contact at an opening located at the bottom of the imaging semiconductor chip, where the bottom is a portion of the imaging semiconductor chip facing the image processing semiconductor chip”

The above construction is consistent with the record. The parties agreed that they accepted the Court’s construction during the hearing. *See* Hearing Tr. 62:25–63:2, 66:2–9, 70:2–4.

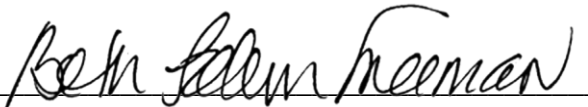
IV. ORDER

As set forth above, the Court construes the disputed terms as follows:

Claim Term	Court’s Construction
“imaging semiconductor chip”/“imaging semiconductor ship”	“a non-CCD semiconductor chip for image capture”
“an analog/digital converter”	“an analog/digital converter in addition to the AD converter recited in claim 1”
“through electrode”	“electrode that passes vertically through at least a layer of material in the imaging semiconductor chip for providing electrical contact at an opening located at the bottom of the imaging semiconductor chip, where the bottom is a portion of the imaging semiconductor chip facing the image processing semiconductor chip”

IT IS SO ORDERED.

Dated: March 20, 2018


 BETH LABSON FREEMAN
 United States District Judge